Report to the Joint Standing Committee on Natural Resources

Second Session of the 122nd Maine Legislature

First Biennial Report on Progress Toward Greenhouse Gas Reduction Goals

Submitted by the
Maine Department of Environmental Protection
in accordance with P.L. 2003 Chapter 237

January, 2006

Background

Maine citizens, the legislature, and the executive branch have been concerned for a number of years about the threat of climate change, and the need for Maine actively to reduce its emissions of greenhouse gases (GHG's). The DEP issued its first report on GHG's in 1990, and subsequently revised its Emission Statement Regulation to include the reporting of GHG's. Prompted by several non-governmental organizations, the State Planning Office released a draft report, *Responding to Climate Change*, in 1998, and later (2000) SPO issued a State of Maine Climate Action Plan. This suggested a set of options for reducing emissions, but did not commit the State to specific actions.

Legislative history

The 121st Maine State Legislature passed, and Governor Baldacci signed into law, L.D. 845, "An Act to Provide Leadership in Addressing the Threat of Climate Change" As enacted, the bill became PL 2003 Chapter 237, 38 M.R.S.A. §574-579. The act set goals (§576) for the reduction of greenhouse gas emissions within the state, adopting similar targets previously proposed by the New England Governors / Eastern Canadian Premiers conference in 2001, signed by then-Governor King, and subsequently endorsed by Governor Baldacci. These call for a reduction to 1990 levels by 2010, to 10% below 1990 levels by 2020, and in the long term, "sufficient to eliminate any dangerous threat to the climate."

To accomplish this goal, the first in the nation to be established in a state statute, the Act identified two primary areas of action: lead by example initiatives (§575), and development of a climate action plan by the Department of Environmental Protection (§577). §578, as subsequently amended by PL 2004 Chapter 144, calls on the Department to evaluate the State's progress toward meeting the reduction goals, review the cost-effectiveness of the actions, and submit a report of its evaluation to the joint standing committee of the Legislature having jurisdiction over natural resource matters by January 1, 2006, and by that date every two years thereafter. The present report is presented to meet that obligation.

Development of the Climate Plan

Follow several months of preparation, including consultation with a number of stakeholders and contracting for facilitation and technical services, Governor Baldacci convened the first meeting of the Stakeholder Advisory Group (SAG) on November 6, 2003. Thirty-two representatives of government, business and industry, and non-governmental organizations, supplemented by four legislators, an external academic resource panel, and DEP staff, began a year-long consideration of climate change issues and potential approaches to mitigating Maine's greenhouse gas emissions. This group advised DEP in the development of *A Climate Action Plan for Maine 2004*, while the Department retained ultimate decision-making responsibility.

Development of the *Plan*, with its 54 recommended actions ("options"), was initiated by four working groups (Transportation and Land Use; Buildings, Facilities, and Manufacturing; Energy and Solid Waste; Agriculture and Forestry) supported by DEP staff, facilitators, and technical consultants. Each recommendation was reviewed for effectiveness in reducing GHG emissions, and for cost effectiveness, by the SAG prior to inclusion. Almost all options were included on the basis of consensus among the SAG members; others not achieving full consensus were included as desirable in principle but without agreement as to means of implementation.

The resulting *Plan* lists the 54 options in decreasing order of expected GHG savings. Almost half would reduce carbon at a negative or negligible overall cost. If all 54 options are ultimately implemented as projected, the statutory targets of the original legislation will be met. Implementation of each option is unique, and may include legislation, rule-making, voluntary action, executive order, support of regional and/or federal activity, or some combination of these.

Governor Baldacci delivered the *Plan* to the chairs of the Natural Resources Committee of the 122nd Maine Legislature on December 1, 2004. The present report summarizes activities undertaken to implement the *Plan* through December 1, 2005.

Implementation of *A Climate Action Plan for Maine* in 2005

As noted in the *Plan*

> [e]ach of the recommended options contains assumptions about the "best case" for speed of implementation: that is, the option would be put in place and begin to save emissions as soon as possible given the technical requirements of the option. Each year of delay in implementing an option, for whatever reason, slows its impact. Since a number of the most important options are already expected to take longer to implement than others, and several would require an extended period of time before their effects were fully realized, the actual timetable for implementation will have a direct effect on whether or not the projected carbon savings are realized by 2010 and 2020. … A number of the options that are most significant (in terms of potential for carbon reduction) either depend upon, or have effects that would be enhanced by, the actions of other jurisdictions. The implementation and effectiveness of several others, particularly those involving the development of, and demand for, renewable electricity supplies, will be affected by similar actions taking place in other New England states. (7, 17ff.)

With these considerations in mind, we report here on those actions and activities that have occurred during 2005. A complete list of the Options, with notes on the current implementation status of each, is found in Appendix A.

Actions of the 122nd legislature, First Session

DEP did not introduce any legislation in this session specifically to implement one or more of the options. However, legislation was introduced by other state agencies, by the Governor, and by legislators, that would in whole or part implement a number of the options. These are summarized here:

Climate Plan Option	***Legislative Document***	***Outcome***
11: Renewable Portfolio Standards (increase)	1065, 1434	As in 2004, died in UTE Committee, which directed State Energy Director to convene a stakeholder group to consider further. Will report to the 2nd session.
15: Recycling / Source Reduction	406	Matches abnd affirms *Plan* recycling goals; signed by Governor.
17: Slowing VMT Growth		Failed: would have promoted bicycle paths
24: Low-GHG Fuel in State Fleets	197	Would have implemented *Plan* goals completely. Failed.
26: Appliance Standards	1435	Would have completely implemented Plan goals, in parallel with most other NE states. Failed.
30: Improve residential building energy codes	1591 (Resolve)	Major substantive rule from PUC: passed.
32: Auto Emissions standards	1465	Major substantive rule. Passed and signed by Governor.
34: State Green Power purchases	913	Would have fully implemented this Option. Failed.
35: Home heating efficiency	397	Natural gas conservation program: signed. Achieves portion of the Option goals.
38: Solar Hot Water 55: Solar Photovoltaic	1586	Implements pilot rebate program. Signed by Governor.
45: State Building energy savings	711	Died in committee
46: Auto feebates	275	Would partially implement. Carried over (Appropriations).
52: Maine bio-diesel	1534	Would have promoted this option. Failed.
53: Low GHG fuel infrastructure	308	Tax exemption extension. Carried over (Appropriations).

Rule Making

The option projected to produce the second-greatest GHG emissions savings, "Implement Tailpipe GHG Emissions Standards," was the subject of rule making by the Department before the Board of Environmental Protection. The rule requiring such standards beginning with the 2009 model year, often called

the "Pavley" rules after the California state legislator who initiated the rules in her state, was adopted by the BEP on December 1, 2005. In this instance, Maine is acting in concert with a number of other northeastern states in adopting these rules.

Stakeholder implementation groups

In completing the *Plan*, the SAG recognized that there were some options with a strong consensus in principle, but for which specific implementation steps were not immediately clear. The SAG agreed that the Department should convene additional stakeholder groups with the task of reviewing these options, and recommending actions to the Department. During 2005, two of these groups began work:

- Workgroup on Option 17, "Lowering the Growth of Vehicle Miles Travelled." Composed of some members of the original Transportation Working Group, plus new members, this group is staffed by DEP, DOT, and the SPO. It has agreed to focus on ways to promote healthy transit-oriented development in some of Maine's key geographical transportation corridors, and is working with the Center for Clean Air Policy, supported by foundation grants, to gather and analyze Maine-specific data in order to assure that any recommendations will meet the desired level of GHG reductions.
- Forestry Management workgroup. This group, co-convened with the Maine Forest Service, is reviewing the six forest management options originally included in the *Plan* in order to choose the most practicable. The group is likely to create a *prospectus* that could be used to attract investors interested in more intensive silvicultural practices that increase the value of forest products while at the same time sequestering carbon, and creating the possibility of GHG offset sales for forest landowners.

The Department intends to convene additional stakeholder implementation groups in 2006 in the areas of agricultural options, and energy efficiency efforts, the latter probably with the assistance of the Public Utilities Commission.

Other actions

In contrast with a number of other states that have adopted similar GHG reduction plans, the Maine *Plan* has an unusually large number of recommended actions the implementation of which lies outside the control of state government. During 2005, market forces were responsible for faster than anticipated implementation of several actions, and at an apparently lower cost. Options particularly worthy of note in this regard are

- ❖ Option 8 (combined with 18 in the *Plan*), "Biomass Generation." As originally designed, this Option assumed that a production tax credit or similar vehicle would be needed to re-start underutilized plants and subsidize others to ensure continued operation, at a cost of $15-17 *per* unit of carbon saved. As it happens, the expansion of markets elsewhere in the region for renewable energy certificates has brought Maine's biomass generation industry to full production, with several new plants under development.

It may be noted, however, that this industry's performance is unpredictable, dependent as it is on factors such as the global demand/supply dynamics of biomass, electricity transmission constraints, etc. This Option will need to be reevaluated regularly to see if long-term carbon savings are occurring.

- Options 9: "Landfill Gas Management." While it's too early to claim full implementation, it would appear that development of landfill gas-to-energy projects is moving ahead more rapidly than modeled, particularly with the expected opening of such a facility in Hampden in early 2006, and the announcement of a large facility under development in West Old Town. In both cases, emerging economic forces made possible management decisions to invest in such projects, without the need for financial incentives.
- Option 4, "Clean Diesel Technologies." In this case, regional distribution in 2006 of low-sulphur diesel fuel in advance of EPA's 2007 heavy-truck vehicle technology standards will likely achieve the goals of this Option without the need for support funding to offset added expense.

Assessment of Overall Progress

Actions already implemented:[1] 2, 8, 18, 30, 32, 35, 38, 40, 55

Actions progressing as expected:[2] 4, 9, 10, 14, 15, 16, 17, 20, 21, 25, 31, 33, 41, 45, 51, 53

Actions delayed or abandoned: 3, 5, 11, 24, 26, 28, 34, 39, 43

Actions pending start-up: 1, 6, 7, 13, 19, 22, 23, 29, 36, 37, 42, 44, 46, 47, 48, 49, 50, 52, 54

Notable in the list above is Option 3, "Regional Cap and Trade." This is to be accomplished by Maine's participation in the Regional Greenhouse Gas Initiative, or RGGI, which is on course to be adopted by seven Northeastern partner states. Two New England states (Massachusetts and Rhode Island) that were originally partners in the project will not participate at this time, while a number of other northeastern states have expressed interest in joining, perhaps before the initial implementation date of 2009. As a result, the GHG savings and costs modeled in the *Plan* will need to be re-calculated; and Options 1 and 7 related to lowering emissions from the electrical generating sector may need to come into force. Since, however, no GHG savings were expected from this Option before 2009, the Department remains cautiously optimistic that this critical action step will be accomplished in a way that meets the targeted date.

Similarly, initial steps leading to implementation of Options 5 (Renewable Energy System Benefit Charge) and 11 (Renewable Portfolio Standard) are uncertain. The Office of Energy Independence and Security will be reporting to the

[1] Whatever is required to set these options into action has occurred. In some instances, this means that legislation or rule that will meet the 2010 and 2020 goals has become law; in others, that actions are already underway that will meet the goals.
[2] Observable and measurable steps have been taken that will result in timely implementation.

Standing Committee on Utilities and Energy in the 2nd session of the 122nd Legislature on the recommendations of a recent stakeholder group considering these issues.

Evaluation of cost effectiveness

The Department was charged in the enabling legislation with adopting a plan, with input from stakeholders, that proposed "reduction in each sector in cost-effective ways,...." The final *Plan's* 54 options were approved by the stakeholders using this and other criteria. Subsequent evaluation of cost effectiveness is an assessment of whether a given action item actually produces the expected (modeled) outcome at the expected cost. Thus, an action is more cost effective if it results in GHG savings at a *lower* cost than anticipated, and vice-versa.

The Department has reviewed the cost-effectiveness of the actions, and can report the following:

- Among those actually "on the ground," insufficient time has passed to allow calculation of either GHG savings, or costs. *Example:* Passage of legislation providing a pilot program of rebates for solar hot water and photo-voltaic systems will need several years of actual data generation in order to assess cost effectiveness.

- Qualitative assessment of a few indicates full implementation at substantially less cost than projected. *Examples:* bio-mass electricity generation and landfill gas-to-energy.

In general, it could be said that the Department has no indications that any actions implemented in the last year are *less* cost effective than anticipated, and that several are almost certainly *more* cost effective than as originally modeled.

Progress on other requirements of PL 2003 237

1. Voluntary agreements (Governor's Carbon Challenge)

Maine's Climate Change law, 38 M.R.S.A., § 575, directs the Department to develop 50 voluntary agreements with businesses and non-profit organizations to reduce greenhouse gases.

As of December 2005, DEP has developed a program to implement this directive called the Governor's Carbon Challenge (GCC), and has entered into 50 agreements with businesses and private non-profits. The program consists of:

- Participants signing a one page agreement and submitting annual progress reports. (The reports include progress to date, reduction methods, activity production index, and future plans for reduction.)
- DEP assistance throughout the entire process.

- Participants, with the DEP's help, use their first year in the program to calculate their base year emissions (1990 or first full year of available data).
- Participants calculate their actual emissions from report years and report this information to the DEP each January.

The DEP website contains the full program description, agreement forms, and participant list and is available at: http://www.maine.gov/dep/oc/carbon.htm

Participants as of December 1, 2005:

1. Accent Dry Cleaners	2. Augusta Water & Sanitary District
3. Baldwin Apple Ladders	4. Bowdoin College
5. Chewonki Foundation	6. City of Hallowell
7. City of Portland	8. City of Saco
9. Coastal Enterprises, Inc. (CEI)	10. Colby College
11. College of the Atlantic	12. Commercial Paving
13. Eastern Maine Medical Center	14. Fairchild Semiconductor
15. Gardiner POTW	16. Hannaford (20 Stores)
17. Homeowners GCC	18. Interface Fabrics
19. Irving Convenience Stores	20. Lamey-Whellehan
21. Laughing Stock Farm	22. Lee Auto Mall #1
23. Lee Auto Mall #2	24. Lyman Morse Boatbuilders
25. Maine Energy Investment Corporation	26. Maine General Health
27. Maine State Housing Authority	28. Maple Hill Farm B&B
29. National Semiconductor	30. Natural Resource Council of Maine
31. NorDx	32. Oakhurst Dairy
33. Poland Spring Water	34. Portland Press Herald
35. Pratt and Whitney	36. Reny's
37. Safe Handling, Inc. (Auburn)	38. Seacoast Property Management
39. State of Maine	40. Swett Street LLC
41. University of Maine-Orono	42. University of New England
43. University of Southern Maine	44. Washboard Laundry
45. Waste Management Inc.	46. West Gardiner Beef
47. Winthrop Congregational Church	48. Wright-Ryan Construction
49. York Hospital	50. ZF Lemforder

DEP is partnering with other state service providers such as Efficiency Maine and the Maine Energy Program to conduct energy audits and help fund eligible projects.

Next steps planned for 2006 include development of a data base to track progress, participant training events, and a recognition program for high achievers.

Inventory and Registry (§575.4)

Greenhouse Gas Point Source Emission Inventory

In its report to the Legislature (January, 2002), the Department proposed to incorporate the reporting of Greenhouse Gas (GHG) emissions into its Emission Statement regulation, DEP Chapter 137. This approach utilized an existing emission inventory infrastructure, thereby minimizing the impact of the additional reporting requirement on both the reporting facilities and the department. In addition, under this scenario, the universe of reporting facilities is well defined and the reporting facilities are generally experienced in the reporting procedure. Under the proposed revision, facilities whose emissions of criteria pollutants trigger the reporting requirements of Chapter 137 would also be required to report emissions of the six greenhouse gasses.

Rulemaking to amend Chapter 137 to include GHG's was initiated in 2003, and upon its adoption by the Board of Environmental Protection in that year, Maine became the first state to require affected facilities to report all six GHG's.

The implementation of the changes to Chapter 137 has proceeded relatively smoothly. This is due in large part to the efforts made by the emission inventory staff to ease the transition into GHG reporting, but is also due to the growing recognition within the regulated community of the need to gain a better understanding of their GHG emissions. Maine's point source inventory for GHG currently includes data from 204 reporting facilities for the calendar years 2003 and 2004 (reported in 2004 and 2005, respectively).

Voluntary Greenhouse Gas Emission Registry (§575.3)

Maine has a long record of participation in regional meetings with non-governmental organizations (NGOs), industry representatives, and other states to explore issues and scenarios associated with GHG reduction projects and emission registries. These groups include the NESCAUM Demonstration Project, the NRDC sponsored Greenhouse Gas Registry Collaborative, and the NEG/ECP Climate Change Action Plan. Since October 2003 Maine has been participating with the northeast states, including New England, New York, New Jersey, Delaware, and Pennsylvania, to develop a Regional Greenhouse Gas Registry (RGGR) for the region.

Greenhouse gas registries provide an organized platform for recording emissions data. Registries are policy neutral meaning that they can support mandatory or voluntary emissions reporting programs.

The registry envisioned by RGGR will support a voluntary greenhouse gas reporting program for regional and national entities (private companies, governments, nonprofit organizations, etc.); will provide a platform for those states wishing to upload their data from their mandatory GHG reporting programs; and

has the potential to serve as the emissions and allowance tracking system for states participating in a regional cap and trade regulatory program. The registry may also serve as a repository for project-based emissions reduction projects. Registry participants will have different reporting requirements to the Registry, depending on whether they are a voluntary reporter, a state mandatory reporter, or are a participant in a regulatory cap-and-trade program.

The registry will use quantification and reporting protocols based on the GHG Protocol, a multi-stakeholder collaboration led by the World Resources Institute and the World Business Council for Sustainable Development. The GHG Protocol corporate standards have been used by the California Climate Action Registry, the World Economic Forum Registry, and many other climate initiatives.

At present, the RGGR participants are focused on finalizing the guidance document governing the program and its emission calculation methodologies. The remaining short-term goals include the development of the software application to support the program; drafting and obtaining approval of a Memorandum of Understanding (MOU) between the participating jurisdictions; and, recruiting participants to enroll in the registry. The MOU is currently expected to be circulated among the participating jurisdictions around mid-2006.

The RGGR states recently participated in a workshop with the California Climate Action Registry and other emerging greenhouse gas registries, including the Midwestern states (WI, OH, MI, IL, IN) about creating an official link between our programs. There is consensus among the participating jurisdictions that there is a need for overall collaboration and so efforts are being made towards the harmonization of the registries.

The main objectives in collaborating with other registries are to: create a common currency, promote consistency, make it easier for businesses to participate, harmonize with international standards, and consolidate resources.

3. Greenhouse gas emissions inventory for state-owned facilities and state-funded programs (§575.1)

The Office of Energy Independence and Security has developed an inventory, and tracks usage, of state motor fuels (including central fleet, the Department of Transportation, and paid employee mileage); state facility electricity use; and state heating fuels use. These numbers are reported annually. The report for the most recently-available figures is included in the Appendices.

Appendices

A. Options implementation spreadsheet
B. State facility emissions inventory